

Weaver Image Reject Mixer With Fine Resolution Frequency Step Size

ABSTRACT OF THE DISCLOSURE

5 Methods and apparatus, in accordance with the present invention, use at least two phase-locked loop based frequency synthesizers to provide a synthesized frequency output having a step size of X , where X is less than the step size of any of the at least two phase-locked loop based oscillators. By combining a first signal having a first frequency, with the output of a first frequency synthesizer having a first 10 frequency step size, NX , to produce an intermediate signal which is in turn combined with the output of a second frequency synthesizer having a second frequency step size, MX , an output signal is produced. M and N are related such that i times $M = N \pm 1$, and i , M and N are integers. By varying the output frequency of the first and second frequency synthesizers, the frequency of the output signal is changed by 15 steps of X , where X is less than the step size of either the first or second frequency synthesizers.